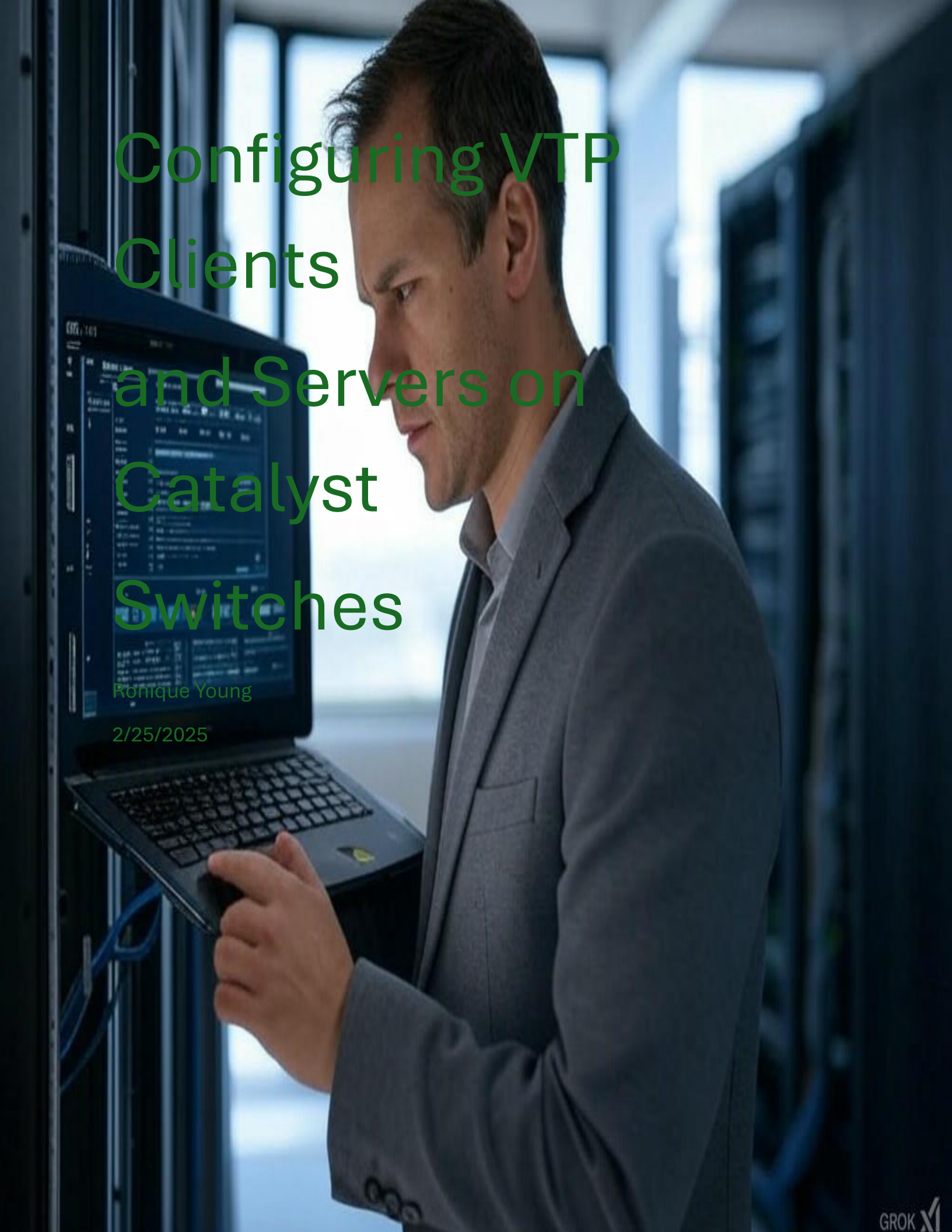

Configuring VTP Clients and Servers on Catalyst Switches

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2/25/2025

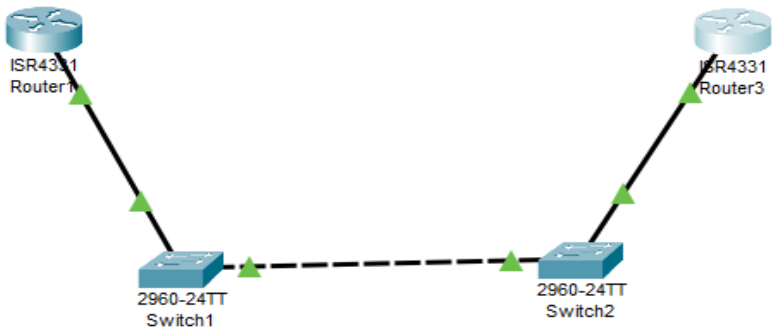
Project Overview: Configuring VTP Modes on Cisco Catalyst Switches

Objective:

In this project, I aimed to demonstrate my ability to configure VLAN Trunking Protocol (VTP) server and client modes on Cisco Catalyst Switches. My goal was to showcase a practical understanding of how these modes function, starting with the default state of Cisco switches, which operate as VTP servers out of the box. This exercise highlights my hands-on skills in network configuration and my readiness to manage VLAN setups in real-world scenarios.

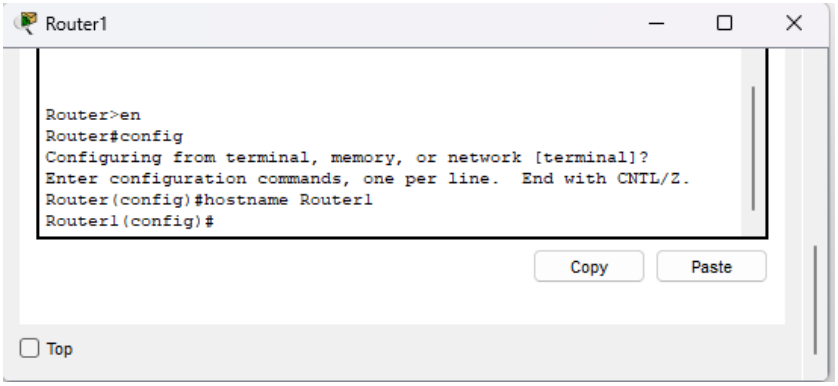
Purpose:

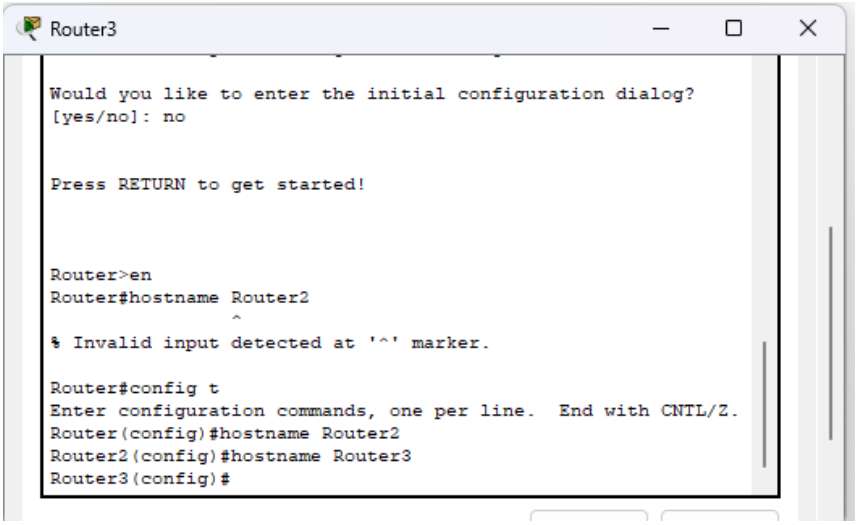
Configuring VTP server and client modes is a foundational skill for any network engineer, and this project reflects my proficiency in this area. I configured VLANs on a VTP server and ensured that VTP clients within the same domain seamlessly received this VLAN data. To enable VLAN sharing across switches, I implemented trunk links—a critical step for efficient network design. This project mirrors tasks I would encounter as a Cisco engineer and aligns with the expectations of the Cisco CCNA certification, proving my capability to employers in network administration and switch management.



Project Task: Setting Up Hostnames for VLAN Configuration

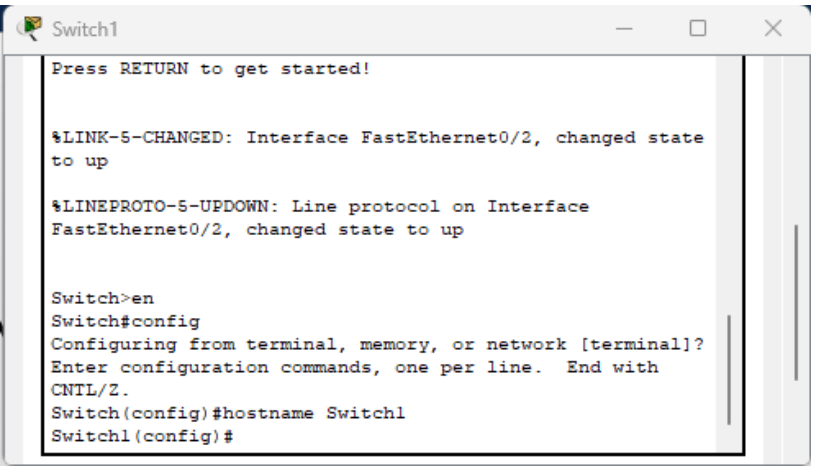
Task 1:

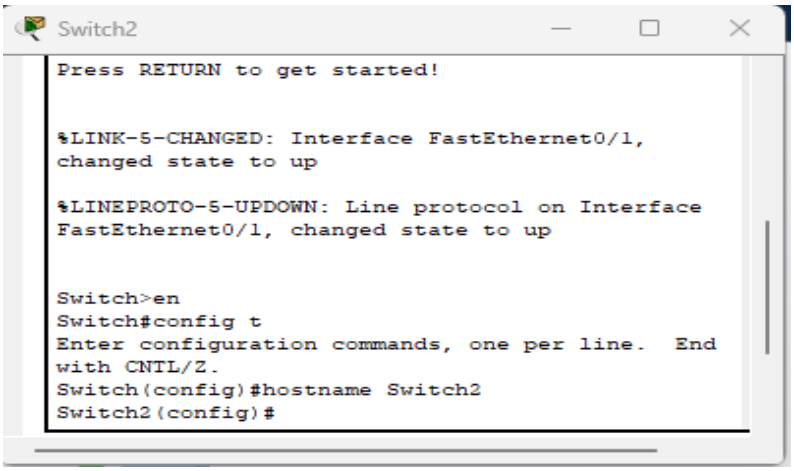




My first task was to lay the groundwork for VLAN configuration by assigning hostnames to the switches and routers as outlined in the network topology. This step highlighted my attention to detail and ability to follow a structured setup process, ensuring clarity in device identification within a network. I worked with Cisco Catalyst Switches, which, by default, operate in VTP

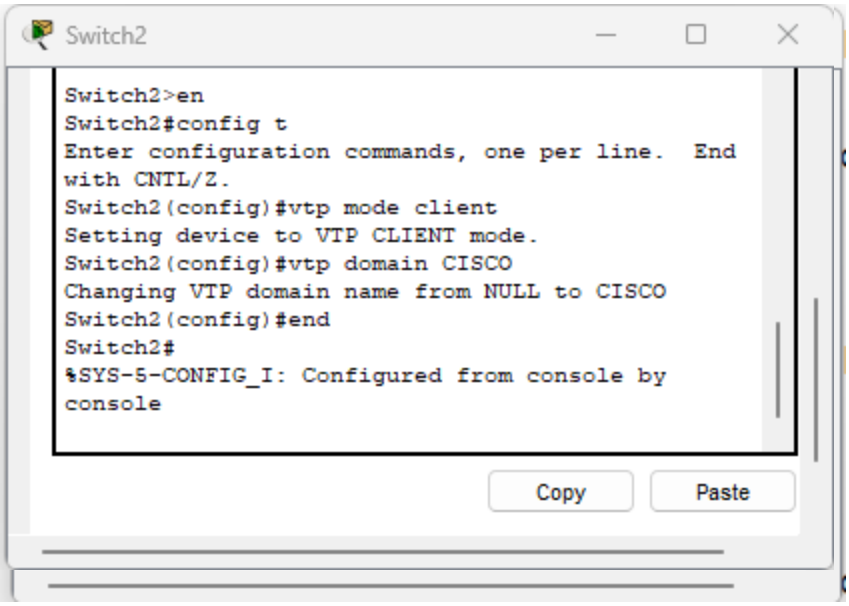
server mode—a key detail I accounted for during configuration. To establish connectivity between the switches, I used a crossover cable, demonstrating my practical knowledge of physical network setup. This foundational task reflects the skills I'd bring to an employer, combining technical precision with an understanding of Cisco device behavior to prepare for advanced VLAN management.





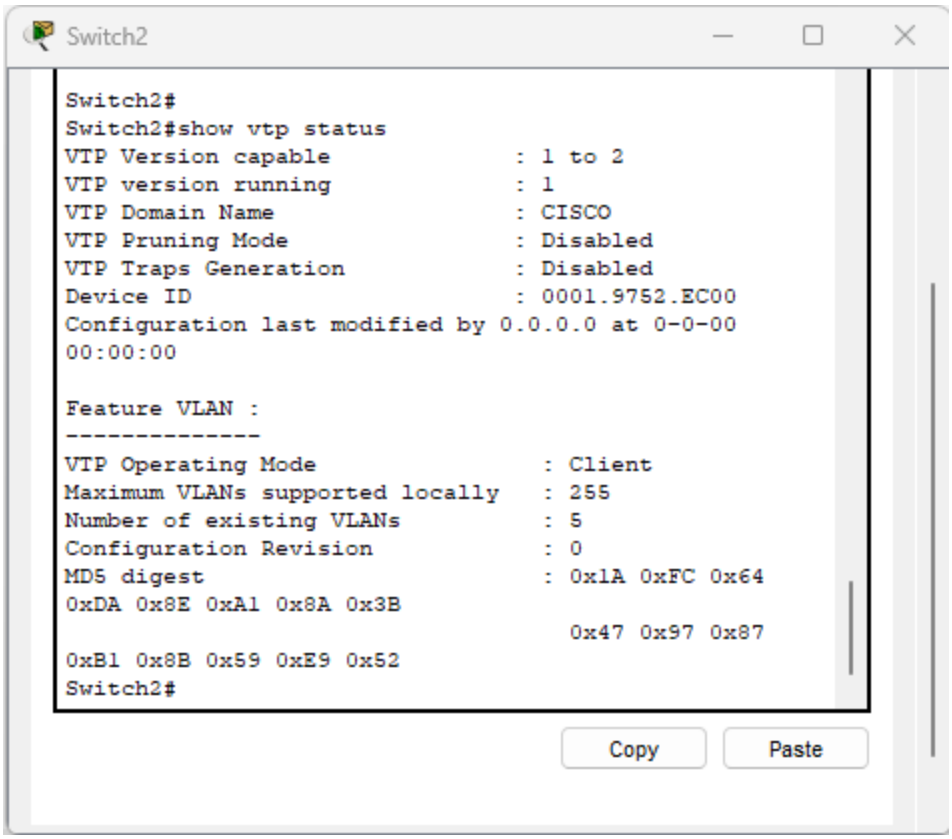
Project Task: Configuring and Verifying VTP Server and Client Modes

Task 2:



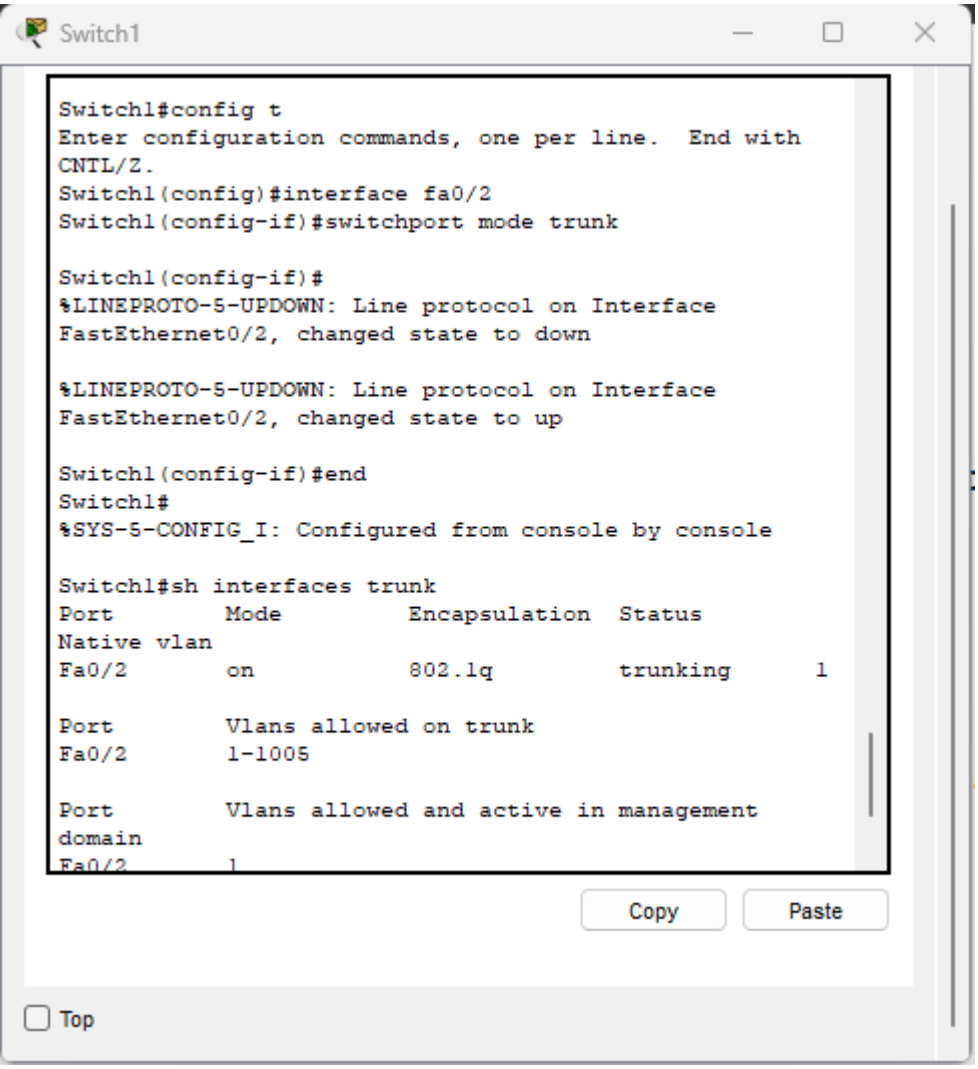
In this task, I configured Switch 1 (Sw1) as a VTP server and Switch 2 (Sw2) as a VTP client, ensuring both operated within the VTP domain named "CISCO." My objective was to demonstrate my ability to establish a functional VTP hierarchy, a critical skill for managing VLANs in a network environment. I began by setting Sw1 as the VTP server, where VLANs would be created and propagated, and then configured Sw2 as a VTP client to receive this VLAN information seamlessly. Assigning both switches to the "CISCO" VTP domain ensured they communicated effectively. After configuration, I verified the setup to confirm Sw1 was correctly distributing VLAN data and Sw2 was receiving it, highlighting my troubleshooting and validation skills. This task highlights my capability as a network engineer proficient in Cisco switch configuration and VTP deployment.

Verification



Project Task: Configuring and verifying an 802.1Q Trunk Link

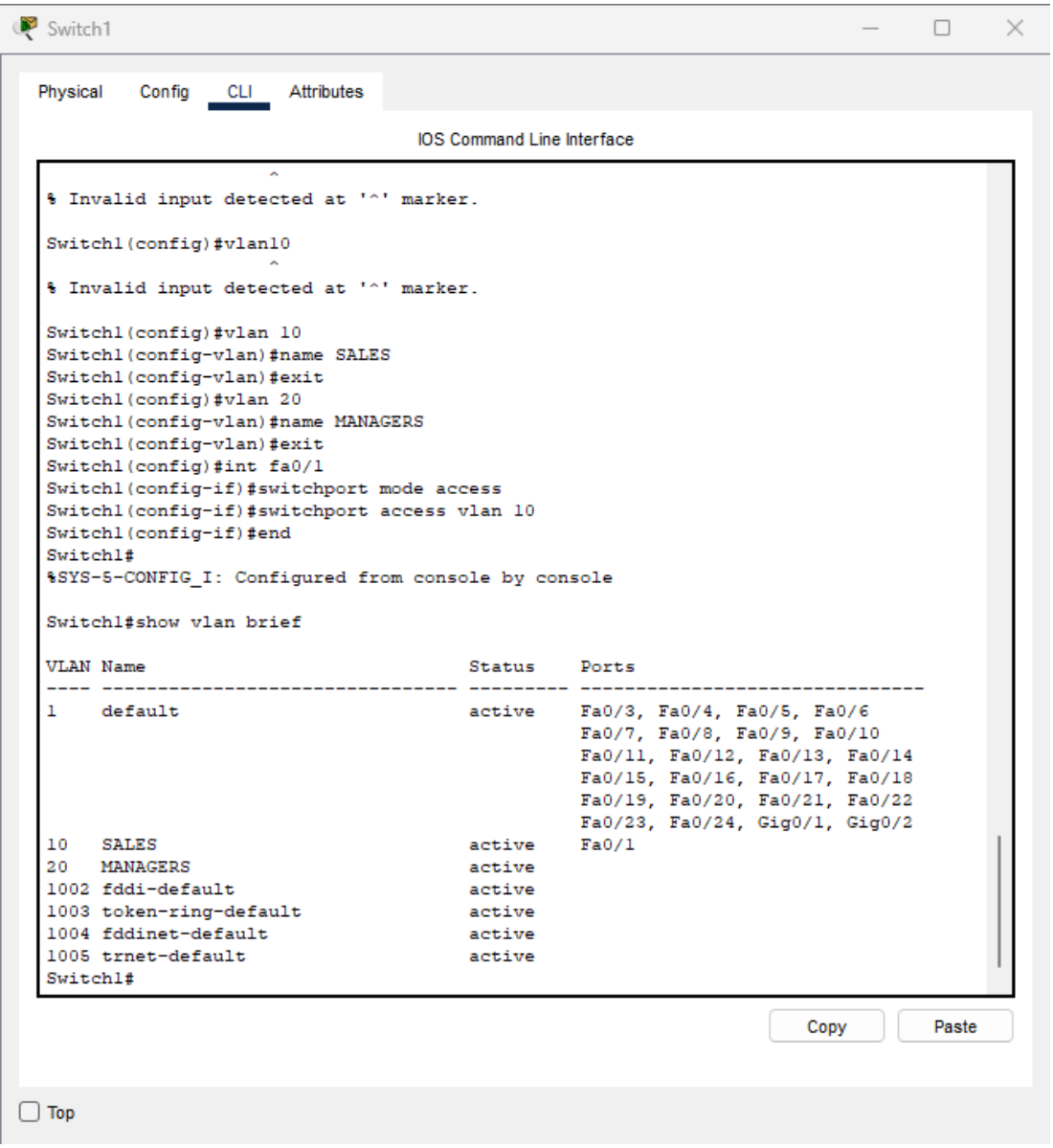
Task 3:



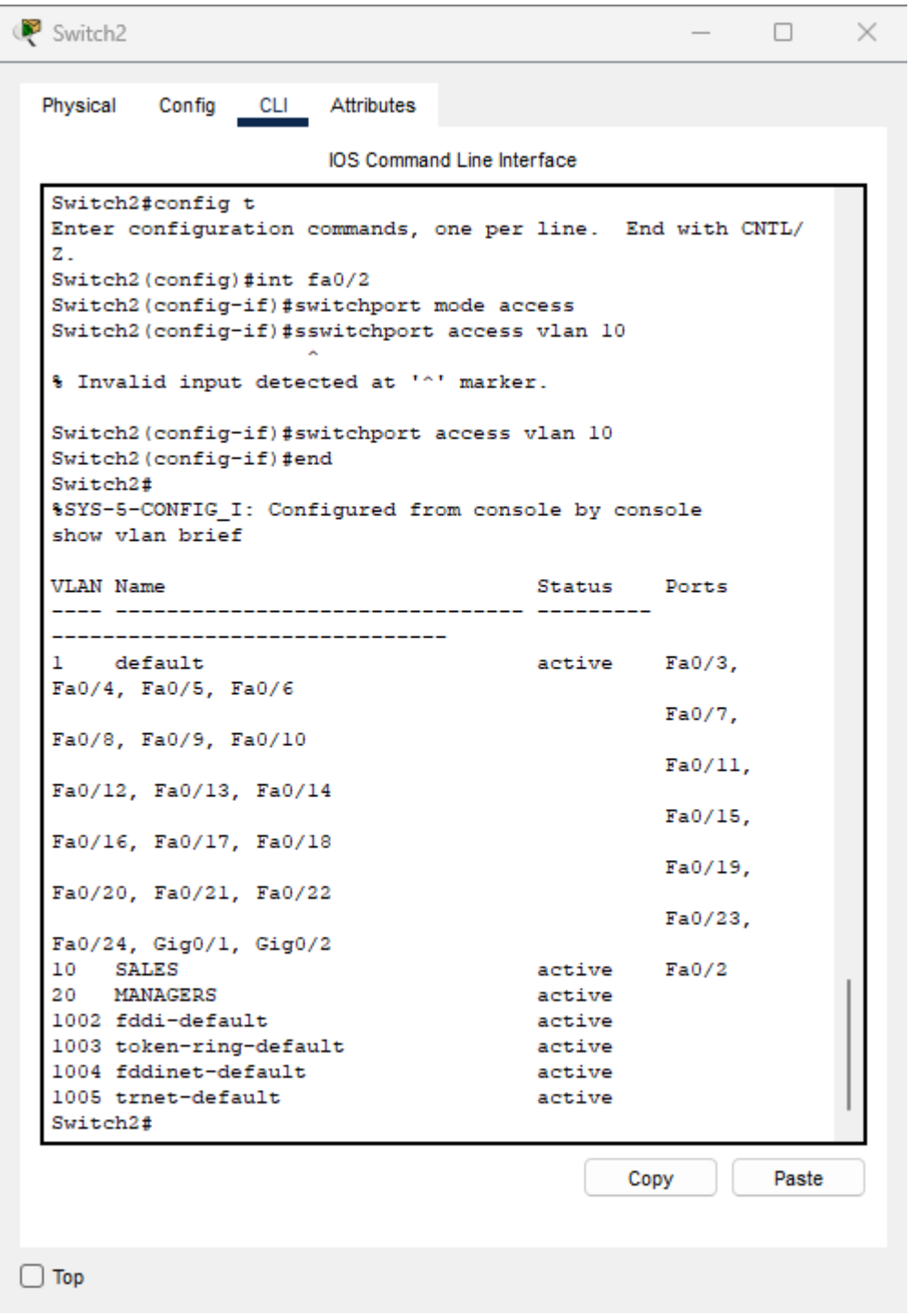
For this task, I configured and verified the FastEthernet0/2 interface between Switch 1 (Sw1) and Switch 2 (Sw2) as an 802.1Q trunk link. My goal was to enable VLAN sharing across the switches, a key component of efficient network design. I set up the trunk using the IEEE 802.1Q standard, which tags VLAN traffic to ensure proper segmentation and communication between Sw1 (the VTP server) and Sw2 (the VTP client) within the "CISCO" VTP domain. After configuration, I verified the trunk's operational status, confirming that it was active and correctly passing VLAN data. This task demonstrates my hands-on expertise in establishing trunk links on Cisco Catalyst Switches, as well as my ability to validate connectivity—skills that are directly applicable to real-world network engineering roles.

Project Task: Configuring and Verifying VLANs with Access Port Assignment

Task 4:



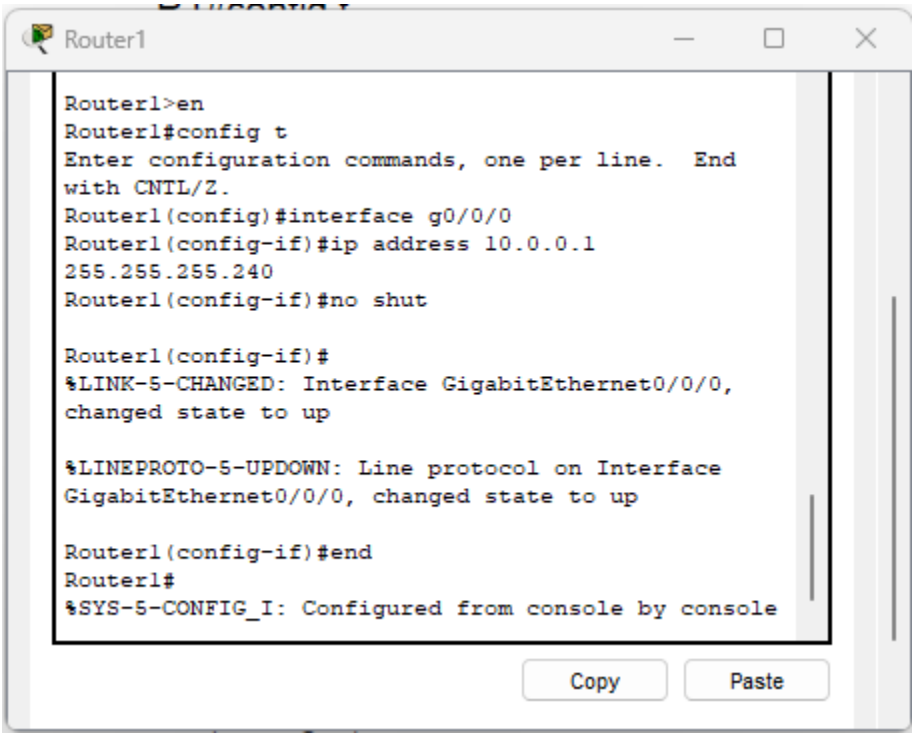
In this task, I configured and verified VLANs 10 and 20 on Switch 1 (Sw1), assigned them specific names, and ensured their proper propagation as part of my VTP server setup. I then assigned the FastEthernet0/1 interface on both Sw1 and FastEthernet0/2 on Sw2 to VLAN 10, configuring these interfaces as access ports to support device connectivity within that VLAN. My approach involved defining VLAN 10 and VLAN 20 on Sw1, leveraging its role as the VTP server to share this configuration with Sw2 (the VTP client) in the "CISCO" domain. After setting the access ports, I verified that FastEthernet0/2 on both switches was correctly associated with VLAN 10 and functioning as intended. This task displays my ability to manage VLAN creation, assign ports,



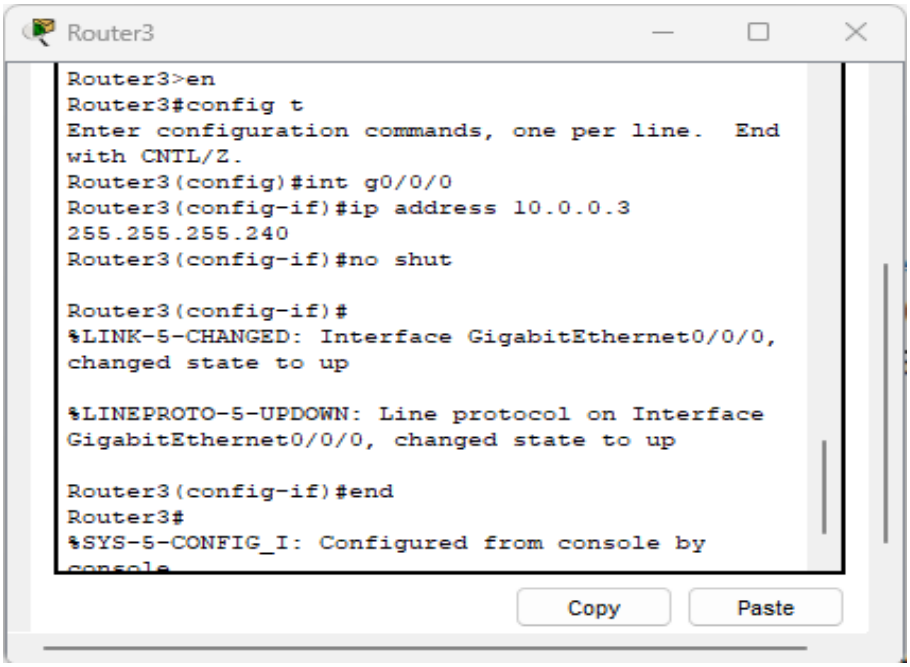
and ensure consistency across network key competencies that highlight my readiness to contribute to an employer's network infrastructure projects.

Project Task: Configuring Router Interfaces and Testing VLAN Connectivity

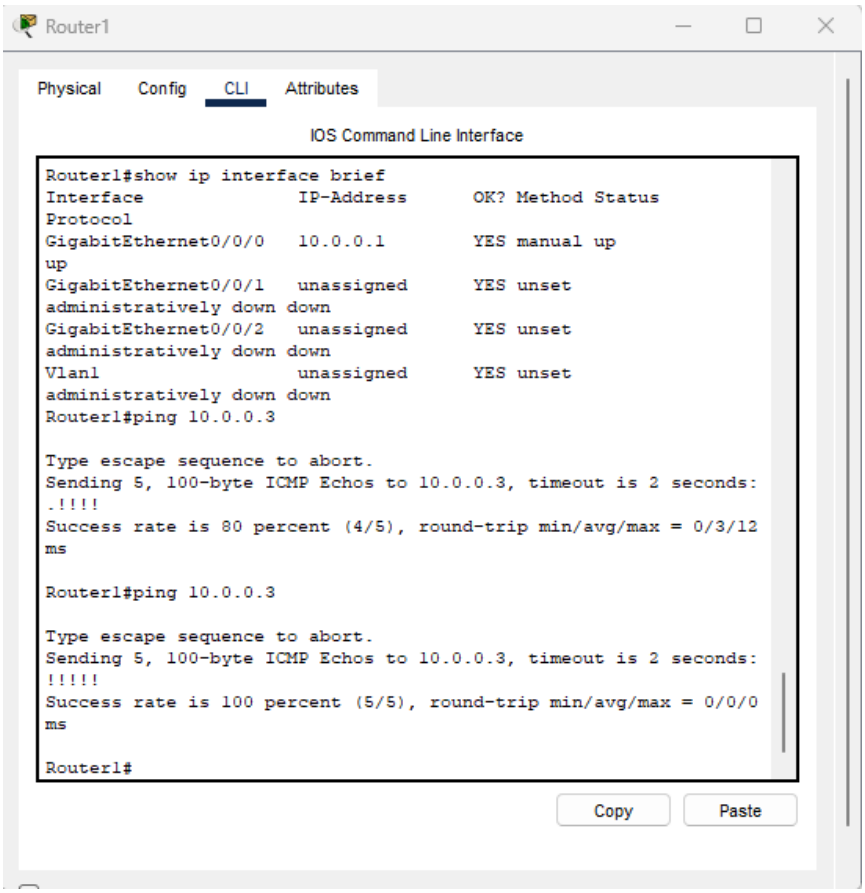
Task 5:



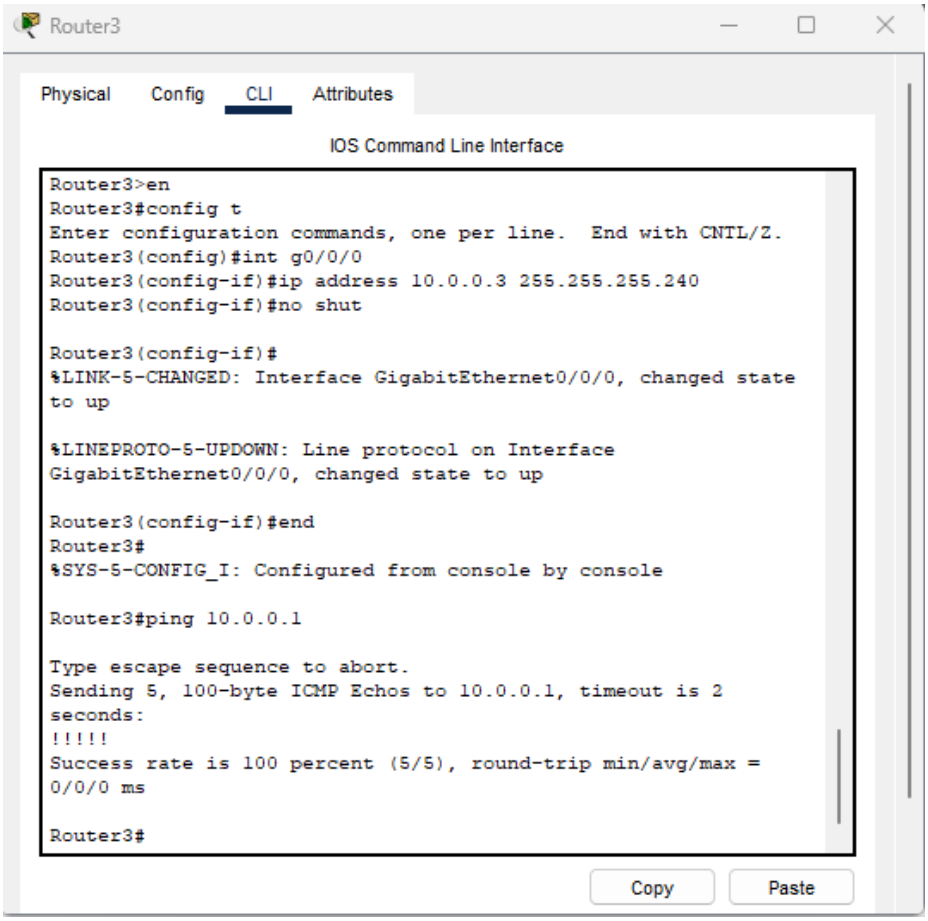
For this task, I configured the Gigabit Ethernet0/0/0 interfaces on Router 1 (R1) and Router 3 (R3) with the IP addresses 10.0.0.1/28 and 10.0.0.3/28, respectively, to integrate them into the VLAN environment.



My goal was to ensure proper IP assignment and test network connectivity across the VLANs previously set up on the switches. After configuring the interfaces, I validated the setup by performing ping



tests—pinging from R1 to R3 and from R3 to R1—to confirm that traffic was successfully traversing the VLANs. This required ensuring the routers were correctly connected to the switches and that the VLAN and trunk configurations were functioning as expected. Successfully completing these tests demonstrated my ability to integrate routers with a switched VLAN topology and troubleshooting connectivity.


Router3
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router3>en
Router3#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router3(config)#int g0/0/0
Router3(config-if)#ip address 10.0.0.3 255.255.255.240
Router3(config-if)#no shut
Router3(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up
Router3(config-if)#end
Router3#
%SYS-5-CONFIG_I: Configured from console by console
Router3#ping 10.0.0.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.0.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms
Router3#
Copy
Paste